OUTPUT PENTODE

EL37

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69W, or as drivers for large power triode push-pull output stage.

HEATER

V_h	6.3	V
I_h	1.4	A

CAPACITANCES

c_{out}	9.0	pF
c_{in}	17.5	pF
c_{a-g1}	1.0	pF

OPERATING CONDITIONS AS PENTODE

V_a	250	V
V_{g2}	250	V
V_{g1}	−13.5	V
I_a	100	mA
I_{g2}	13.5	mA
R_k	120	Ω
g_m	11	mA/V
r_a	13.5	kΩ
μ_{g1-g2}	10	
R_a	2.5	kΩ
$V_{in\ (r.m.s.)}$ (P_{out}=50mW)	0.45	V
P_{out} (D_{tot} = 10%)	10.5	W
$V_{in\ (r.m.s.)}$ (start of I_{g1})	10.8	V
D_{tot} (start of I_{g1})	13.5	%
P_{out} (start of I_{g1})	11.5	W

OPERATING CONDITIONS — TWO VALVES IN PUSH-PULL (Self Bias)

V_a	250	325	V
V_{g2}	250	325	V
$I_{a(0)}$	2×59	2×77	mA
I_a (max. sig.)	2×68	2×90	mA
$I_{g2(0)}$	2×7.5	2×9.75	mA
I_{g2} (max. sig.)	2×18	2×30	mA
R_k	130	130	Ω
R_{a-a}	4.0	4.0	kΩ
P_{out}	20	35	W
$V_{in\ (g1-g1)\ (r.m.s.)}$	29	43	V
D_{tot}	2.25	4.4	%



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OPERATING CONDITIONS — TWO VALVES IN PUSH-PULL (Fixed Bias)

V_a	350	400	V
V_{g2}	350	400	V
$I_{a(o)}$	2×40	2×50	mA
I_a (max. sig.)	2×118	2×138	mA
$I_{g2(o)}$	2×5	2×6	mA
I_{g2} (max. sig.)	2×29	2×36	mA
V_{g1}	—31	—36	V
R_{a-a}	3.25	3.25	kΩ
P_{out}	46	69	W
$V_{in\ (g1-g1)\ (r.m.s.)}$	43.4	49	W
D_{tot}	2.8	2.5	%

OPERATING CONDITIONS AS SINGLE VALVE, TRIODE CONNECTED

(Grid 2 connected to anode by 100 Ω resistor)

V_a	300	400	V
I_a	50	37.5	mA
V_{g1}	—26	—39	V
g_m	6.5	4.5	mA/V
μ	9.0	9.0	
r_a	1.4	2.0	kΩ

OPERATING CONDITIONS AS PUSH-PULL PAIR, TRIODE CONNECTED (Self Bias)

V_b	350	435	V
V_a	320	400	V
$I_{a+g2(o)}$	2×56	2×70	mA
I_{a+g2} (max. sig.)	2×64	2×80	mA
p_{a+g2}	2×18	2×28	W
R_k	245	245	Ω
R_{a-a}	4.0	4.0	kΩ
$V_{in\ (r.m.s.)}$	2×21.5	2×27.2	V
P_{out}	12.5	20.6	W
D_{tot}	4.1	4.3	%

LIMITING VALUES — PENTODE CONNECTED

$V_{a(b)}$ max.	800	V
V_a max.	400	V
$V_{g2(b)}$ max.	800	V
V_{g2} max.	400	V
V_{g1} max. ($I_{g1} = +0.3\mu A$)	—1.3	V
V_{h-k} max.	75	V
R_{h-k} max.	5.0	kΩ

OUTPUT PENTODE



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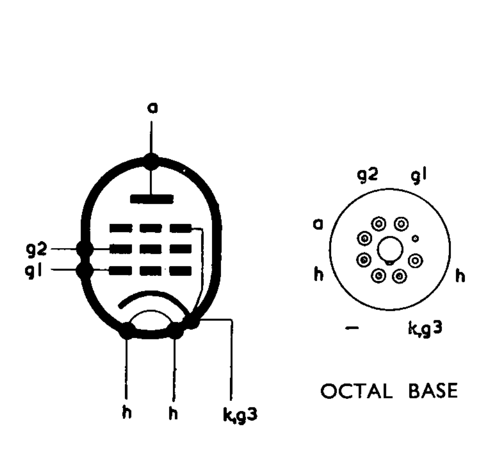
R_{g1-k} max. (cathode bias)	500	kΩ
R_{g1-k} max. (fixed bias)	100	kΩ
p_a max.	25	W
p_{g2} max.	6.0	W
I_k max.	200	mA

LIMITING VALUES — TRIODE CONNECTED (NORMAL APPLICATIONS)

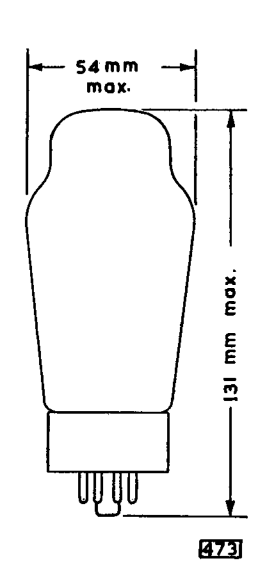
V_{a+g2} max.	400	V
p_{a+g2} max.	28	W

LIMITING VALUES — TRIODE CONNECTED (IN CATHODE-COUPLED PUSH-PULL DRIVER STAGE FOR LARGE POWER TRIODES)

V_{a+g2} max.	500	V
p_{a+g2} max.	12.5	W



OCTAL BASE



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OUTPUT PENTODE

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ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE FOR SCREEN-GRID VOLTAGE OF 250 V